CUMULATION of the STRUCTURAL DISPROPORTIONS in SOVIET ECONOMY

by Vadim D. MENIKER

Summary. Inadequate development of agriculture, transportation and energy supply in comparison with industry and national income in the USSR is under discussion. The Soviet response to structural disbalance and Soviet need the Western economic assistance is considered.

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[Article by V. Meniker, Russian, pp 1-15]

It is widely known that the national economy of communist countries is weaker than noncommunist economies at approximately the same historical-economic level. This is confirmed by the most fleeting comparisons of the CEMA and the European Economic Community, the U.S., and USSR, Czechoslovakia and Belgium, Romania and Venezuela, North and South Korea, and the like. Many of those, however, who consider communism a "purely Russian" or "purely Slavic" phenomenon often directly or indirectly propound the idea that it merely catalyzed the long standing shortcomings of the people of countries presently under communist domination: Lack of initiative, laziness, disorder in the work, inability to keep one's work, lack of concern for tomorrow, and so on. The popularity of Berdyayev's idea about the imminent link of communism with the Russian national character, and the dissemination of leftist and radical leftist theories further distorts the reasoning of a sober-minded person. The average (and not only the average) person, lost in the world of the technical and moral revolution seeks a quiet refuge and involuntarily confuses the concept of anarchy with concepts of ideological, political and economic pluralism. At the same time it would not be bad at all to limit anarchy, if everyone could only be hardworking, responsible, and prudent.

At the same time observations of communists, their social organizations, and state institutes indicate that with all the national intellectual, and institutional differences the communists, individuals and organizations, reveal a striking similarity in the most general and important behavioral features: neglect of facts in the name of theory, neglect of means in the name of the goal, neglect of the present in the name of the future. There are common features in the economic characters of these countries as well. These features are predetermined by the community of the economic doctrine of communism.

The behavioristic reflection of the communist doctrine in economics consists of a neglect of consumption in the name of production, while inside production it consists of a neglect of ancillary branches, the infrastructure, in the name of the production of the final product. This is

understandable. Other conditions being equal it is much more difficult to manipulate production and economic life which involves the participation of millions of people, hundreds of thousands of cells of society, than it is to manipulate the distribution of a state product which is already obtained and concentrated. Concern for auxiliary branches, for the infrastructure complicates the production process, puts it to a significant degree under the will of the lower steps of the economic hierarchy. In addition development of the infrastructure detracts funds from the production of the final product thereby hindering the possibility of manipulating the mass of labor already embodied in such a product. It is true that subsequently a developed infrastructure can increase the amount of the product or diminish its losses. The center of gravity of the communist doctrine of economics, however, rests on the fact that sacrifice and delay of the present in the name of the future are only permissible in the sphere of consumption, while the product is required immediately, right away.

The practical implementation of this doctrine was promoted by the backwardness of economic and technical reasoning in the USSR connected with the overall historical backwardness of the country, the communist ideological monotheism, and lack of personnel aggravated by the destruction and banishment of the best of them as well as by the insufficient training of new workers and arbitrariness in economic practice. Monstrously illiterate thoughts concerning the correlation of demand and supply, commodity production, exchange, and the like, expressed by Stalin in his last works merely constitute an authoritative indoctrination of the ideas of theoreticians and practitioners of the State Planning Commission and the Institute of Economics of the USSR Academy of Sciences no matter how they deny these thoughts after the demise of the "leading figure" of economic science.

The combination of the authoritative doctrine and backward reasoning brought to life the sadly famous system of planning which, being extremely centralized and detailed, has nothing in common with observation of the harmonious development of the economic system. The main principle in the plan of soviet enterprises and territories is the output of gross production.

Applying R. Stone's well known scheme* to the Soviet economy it is possible to reveal a number of reasons for the possible structural lack of balance in this economy as a system of theory, facts, and structures (fig. 1).

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* R. Stone's work Modeling of Economic System was published in a translation by the author of this article in the Soviet magazine Ekonomika i Matematicheskiye Metody (Economics and Mathematical Methods), 1965, Vol 1, Nos 2-3, pages 363-390. As far as I know this work was not published in full in the English language and was written especially for the indicated magazine. Only the part containing a description of the "Rocket" model of the British economy was included in a number of works by Stone, including the series of publications by University of Cambridge, Dept. of Applied Economics, A Program for Growth, L., Chapman and Hall, 1962-1964.

Let us recall that according to this scheme an economic model 3 is created through the combination of theory 1 and facts 2. Formation of economic policy 4 is based on consideration of the possibilities of the economy reflected by model 3 in combination with goals 5 which are determined by policy. Plan 7 is formed on the basis of economic policy 4 and the existing methods of economic management 6. In the course of the practical realization of the plan 7 with consideration of current events 8 in the economic life, economic experience 9 is formed which must modify the adopted theory 1 through feedback channels (shown on the drawing with a dotted line) along with the established goals 5, as well as, the existing methods of economic management 6, which were earlier adopted as the most effective. The cited scheme actually has many more feedbacks. The critical path calculated in terms of the SRM theory (critical path method) in the economic system designed to take into account the actual situation, passes along the fact - model - economic - policy - plan path (2 - 3 - 4 - 7), whereas in the communist economy it passes along the path theory - goals - plan (1 - 5 - 7) depicted in fig. 1 by a dotted line.

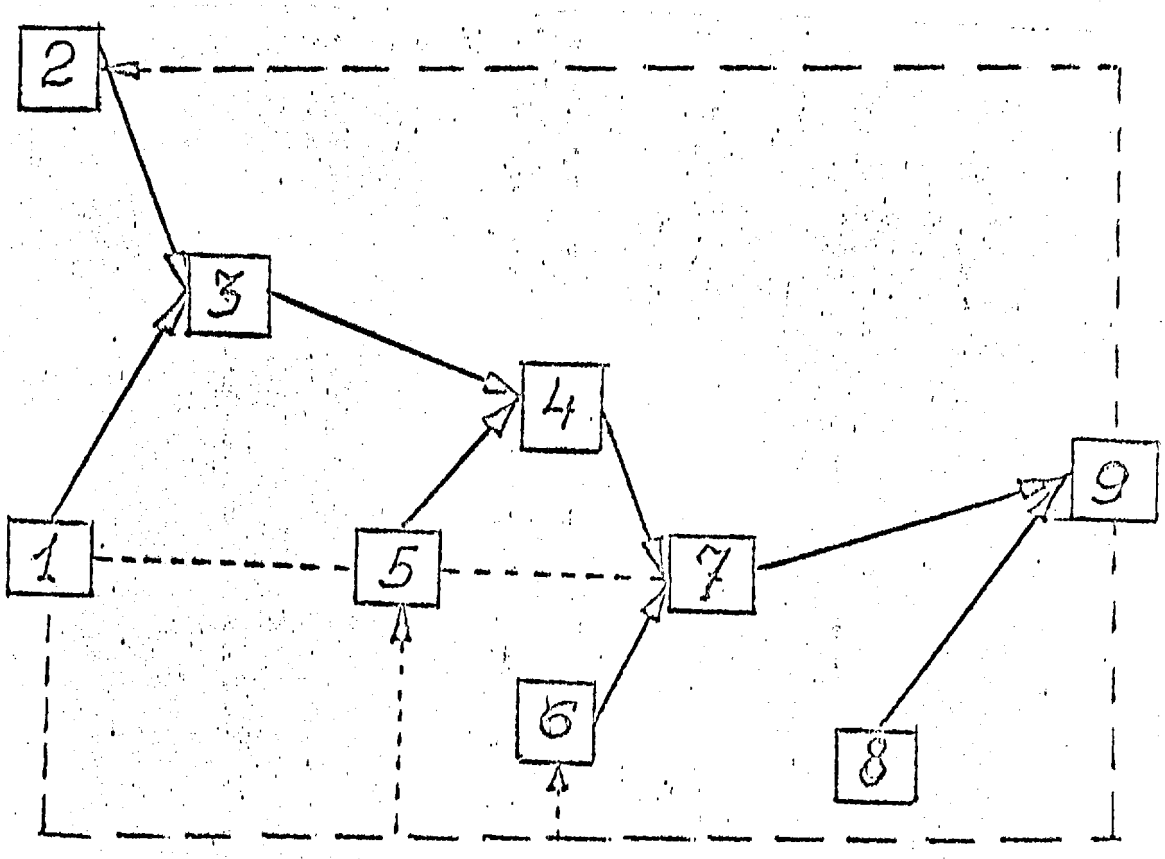

Figure 1. System of links between elements of economic theory and practice.

Key: 1. Theory
2. Facts
3. Economic model
4. Economic policy
5. Goals
6. Existing methods of economic management
7. Plan
8. Current events
9. Economic experience

Prolonged neglect of real economic categories has its results. The lag of the infrastructure aggravated by the destruction of an important part of the infrastructure, agriculture during the years of collectivization, which is natural for the Soviet economy of the initial five-year plans (just as it is for any backward but swiftly developing economy) became a constant factor inhibiting the growth of the Soviet economy and welfare of the population of the USSR.

Examination of several statistical aggregates officially published in the USSR indicates that the lack of infrastructural balance in the Soviet economy has intensified in the last several years.

One of the main and direct causes of the disproportional development-decline of the effectiveness of investments (capital investments) has been covered in the Soviet press with alarm for a long time. Let us compare the dynamics of capital investments and the intoduction of fixed capital (table 1).

The table indicates that fixed capital (capital values) increased in volume much slower than expenditures on their creation. At the same time it is necessary to take into consideration that the statistics of capital investments cited, for instance, in the collection Narodnoye Khozyaystvo SSSR (National Economy of the USSR) bears a formal budgetary and not a realistically economic character. It does not include such important elements of capital expenditures as expenditures on the large part of design work, on reforestation, on the formation and improvement of the basic herd (without young cattle), on the acquisition of equipment for operation of administrative, educational, and medical establishments, or on geological-prospecting operations, not connected with construction.*

In Table 1 the comparison of dynamics is carried out with lag of one five-year plan. In the last three five-year plans, however, this shift proved to be insufficient. That is why at the present time departures are made with increasing frequency in the USSR from the investment effectiveness coefficient equal to 0.2 in accordance with the "typical method" of the State Planning Commission and the Institute of Economics (1962), with a shift to coefficients of 0.169 and even 0.15. This evidences a slowing down of the time periods and accumulation of reserves of uncompleted construction. Table 2 contains eloquent Soviet data on this.

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* In part this substantially lowers the production cost of petroleum for Soviet petroleum extracting enterprises. This production cost does not even include expenditures on industrial drilling. Official calculations include only comparatively small expenditures on the pumping of petroleum from the ground. Actually petroleum costs much more than is possible to judge by the prices at which it is introduced in the Soviet economy and on the world market.

Table 1. Investments and Introduction of Fixed Capital in the Postwar Five-Year Plans (with consideration of the five-year lag) by State and Cooperative Enterprises and Organizations (without kolkhozes).

	Billions of rubles		Growth rate %	
	Investment	Introduction of fixed capital	Investment	Introduction of fixed capital
4th Five-year plan [1946-1950]	40.5	35.3	100.0	-
5th Five-year plan [1951-1955]	77.8	68.3	192.1	100.0
6th Five-year plan [1956-1960]	142.2	130.8	351.1	191.5
7th Five-year plan [1961-1965]	217.2	203.2	536.3	297.5
8th Five-year plan [1966-1970]	312.0	285.4	770.4	417.9

Source: Narodnoye Khozyaystvo SSR v 1970 g. (National Economy of the USSR in 1970) pp 471, 478 and author's calculations.

The decrease in the volume of uncompleted construction by comparison with investments in 1970 is explained very prosaically -- that was the last year of the five-year plan when it was necessary to urgently report on the regularly occurring great achievements. Already in 1972, according to Kosygin, the volume of uncompleted construction rose to 70 billion rubles, which amounted to around 76 percent of the amount of investments for that year.*

Table 2. Uncompleted Construction in State Cooperative Enterprises and Organizations (at the end of the year)

	Billions of rubles	In percent of the volume of annual investments
1965	29.6	69
1966	32.5	71
1967	35.8	72
1968	41.8	77
1969	48.6	80
1970	52.5	73

Source: Narodnoye Khozyaystvo SSR v 1970 g. (National Economy of the USSR in 1970), page 490.

For the purpose of this analysis it appeared useful to examine the correlation of indexes of the dynamics of the following major economic aggregates: national income (or, for a number of noncommunist countries)

* Planovoye Khozyaystvo (Planned Economy), No 11, 1972, p 5. Vestnik Statistiki (Statistical Herald), No 8, 1972, p 94.

industry, agriculture, railway transport and consumption of power resources (in term of the coal equivalent) on the basis of coefficients used in the publication World Energy Supply. Table 3 shows the percentage of growth in industrial production per one percent of increase in the national income (of GDR) in certain developed countries during the entire postwar period, in the 60's and after 1965.

Table 3. Percentage of Increase in the Volume of Industrial Production per One Percent of Increase in the National Income of a Number of States

	Entire post-war period	1960--1970	1965--1970
USSR	1.31	1.35	1.32
USA	0.63	1.32	1.35
Canada	1.43	1.38	1.30
Japan	1.48	1.29	1.32
France	1.23	0.78	0.85
FRG	0.38	1.05	1.10
Italy	2.07	1.35	1.36
Sweden	0.31	1.55	1.57
England	0.20	1.06	1.06

Source: Calculated on the basis of national statistics of the countries, as well as according to Yearbook of National Accounts Statistics 1970.

Table 3 indicates that in the USSR the growth rates of industry in all three periods outstripped the growth of national income. Such phenomenon was observed in other countries as well. There, however, this was a spontaneous process often connected with the process of postwar restoration, which slowed down after its completion. In the USSR this was a purposeful policy connected with the social product race which was already mentioned. Development of the Soviet economy and especially industry is corrected very poorly with the growth rate in the welfare of the population. According to unpublished data of workers in the Central Economic-Mathematical Institute and the Institute of World Economy and International Relations of the USSR Academy of Sciences branches producing the means of production (key industries) in the Soviet Union work for each other by 74 percent, whereas in the U.S. this comes to only 47 percent.

A particularly serious infrastructural defect of the Soviet economy is the lag in agriculture. In no industrial country with a developed agriculture did the correlation of the growth rates of the national income, industry, and agriculture form as poorly for the agrarian sector as in the USSR. Table 4 indicates that agriculture is lagging in the USSR at a growing rate behind industry and this lag is growing faster than in other countries.

Table 4. Percent of Increase in Agricultural Production per Percent of Rise in the National Income and Percent of Growth in Industrial Production in the USSR and Other Countries

	Per percent of increase in national income (or)			Per percent of increase in industrial production		
	Postwar period	1960-1970	1965-1970	Postwar period	1960-1970	1965-1970
USSR	0.17	0.40	0.40	0.13	0.25	0.28
USA	0.15	0.27	0.28	0.24	0.20	0.21
Canada	0.41	0.70	0.49	0.28	0.56	0.36
Japan	0.21	0.25	0.22	0.15	0.20	0.20
France	0.21	0.41	0.36	0.17	0.55	0.46
FRG	0.06	0.10	0.31	0.15	0.10	0.31
Italy	0.36	0.60	0.52	0.17	0.47	0.38
Sweden	0.32	0.06	0.04	0.09	0.04	0.03
England	0.12	1.10	1.01	0.56	1.07	0.96

Source: Same as for Table 3.

In the Soviet Union with its vast spaces a big role is played by transportation. Unfortunately it was impossible to make a comparison between states with regard to transportation similar to the one made in Table 4 for agriculture, since information is not published in other countries pertaining to freight traffic involving all types of transportation in a single index. As far as railway shipments are concerned it is quite natural that the USSR outstrips other countries by a considerable margin for the world tendency consists of the development of non railway types of transportation (Table 5).

The table indicates that development of railway transportation in the USSR also lagged farther behind industrial development than in a number of other countries. The lag in the development of motor transportation, which was progressing rapidly throughout the world, was also superimposed on this defect. Motor transportation consolidated direct links between producers and consumers. Soviet researchers, however, write much about the weakness of such links. Indirect data, however indicate the fact that existing scales in the development of railway transportation are inadequate for Soviet economy. It must be noted that the specific share of all forms of transportation in the formation of national income in the USSR lags behind all countries taken by us for comparison (See below, Table 8). Data cited by us in one of our other works* indicate that around one-fifth of all freight in the USSR is transported between Soviet republics, and during the decade between 1960 and 1970 the share of inter-republic shipments showed a slight increase.

* "Socio-Economic Potential of Soviet Internal Diaspora: General Approach" (to be published).

Table 5. Percentage of Increase in Freight Traffic in Railway Transport per Percent of Rise in the National Income and per Percent of Increase in Industrial Production in the USSR and Other Countries

	Per percent of rise in the national income (or GDR)			Per percent of increase in industrial production		
	Postwar period	1960-1970	1965-1970	Postwar period	1960-1970	1965-1970
USSR	0.88	1.19	1.11	0.67	0.27	0.30
USA	0.25	0.80	0.72	0.39	0.60	0.53
Canada	0.80	1.00	0.98	0.55	0.78	0.75
Japan	1.05	0.10	0.04	0.77	0.08	0.06
France	1.22	0.33	0.27	1.00	0.42	0.31
FRG	0.28	0.34	0.36	0.75	0.30	0.31
Italy	0.35	0.01	0.14	0.17	0.01	0.10
Sweden	0.27	0.94	0.93	0.85	0.61	0.59
England*	-	-	-	-	-	-

*Railway freight traffic declined steadily.

Source: Same as for Table 3.

The point is that development of national regions in the USSR was not only the result of natural internal processes, but also a consequence of a thought out policy guiding this development along a path of the creation of a mutually dependent economy which was often to the detriment of real economic needs of the country. In part the increase in the share of interrepublic shipments in the overall freight traffic could have taken place only on the basis of bulk cargoes, that is raw material (it accounts for more than four-fifths of the entire volume of shipments). This, in turn means that the regions of extraction and processing of raw materials, i.e., the producers and consumers, were moved further from each other. The same is indicated by the increase in the distance of shipments of the most important types of raw materials and all freight in general by rail in the USSR during the same decade (Table 6).

The state of the fuel and energy balance causes particular concern among Soviet planning organs. Contrary to the logical scheme of economic development, which presumes that the growth in the consumption of energy resources must outstrip the development of the economy as a whole, a reverse picture is observed in the USSR (Table 7).

Table 6. Increase in the Average Distance of Shipment of a Ton of Bulk Cargo During 1960-1970 (Kilometers).

	1960	1970	Increase (%)
All freight	798	861	107.9
Coal	681	692	101.6
Coke	617	707	114.6
Ferrous metals	1,163	1,357	116.7
Lumber	1,387	1,647	118.7
Ore	552	690	125.0
Mineral building materials	364	434	119.2

Source: Narodnoye Khozyaystvo SSSR v 1970 g., page 432 and the author's calculations.

Table 7. Percentage in the Rise of Consumption of Energy Resources per Percent of Increase in the National Income and per Percent of Rise in Industrial Production in the USSR and Other Countries

	Per percent of increase in the national income (or GDR)			Per percent of rise in industrial production		
	Postwar period	1960-1970	1965-1970	Postwar period	1960-1970	1965-1970
USSR	0.36	0.57	0.53	0.24	0.43	0.40
USA	0.23	0.94	1.01	0.37	0.71	0.75
Canada	0.54	1.47	1.42	0.37	1.09	1.10
Japan	0.64	1.04	1.05	0.43	0.82	0.79
France	0.40	0.92	0.90	0.25	1.15	1.06
FRG	0.22	0.80	0.79	0.57	0.74	0.72
Italy	1.10	2.14	2.11	0.60	1.58	1.55
Sweden	0.21	1.37	1.60	0.55	0.87	1.01
England	0.06	0.43	0.37	0.33	0.41	0.35

Source: The same as for Table 3 and also calculations on the basis of publication "World Energy Supply."

The deficit of energy resources in the Soviet economy is explained by three reasons: their overall shortage, disproportions in the fuel-energy balance, and increased energy consumption capacity of the economic structure as a whole.

The shortage of energy resources along with inadequate development of fuel extracting branches are also explained by the exhaustion of the sources of energy carriers in the main industrial regions and by the necessity of shifting energy production to the east, which requires vast funds for investments in the fuel branches themselves and in the capacities for shifting the energy carriers (ground transportation, pipelines, electric power transmission

Disproportions in the fuel-energy balance are brought about by a great expenditure of certain energy carriers for the production of others. According to our evaluation made on the basis of interbranch balances of the USSR in 1959 and 1966, the situation in this sphere is certainly not improving. In 1959 around 36 percent of the expenditures in the fuel-energy branches did not yield a final effect, remaining in the same branches. In 1966 this share rose to 42 percent. The amount of energy spent on the transfer of some energy carriers into others is nearing to 50 percent of the overall volume of energy resources. This is explained not only by the development of heat and electric power generation but also by the inadequate development of all types of transportation, mentioned above, which are becoming the principal consumers of energy carriers in the advanced countries (Motor, water, and air transport). Information on the losses of energy are almost entirely absent from Soviet statistics with the exception of information about the constantly growing losses of electric power in the networks*. The numerous reports in the Soviet press regarding the burning of by-product gas in flares because of the lack of possibilities for its trapping and utilization, and about the crushing of coal during shipment, and the like, however, indicate the existence of great losses of energy carriers that have already been obtained.

At the same time the structure of the Soviet economy itself requires increased expenditures of energy resources as compared with developed non-communist countries. Despite tumultuous growth of industry and the lag of agriculture, the USSR, if it is possible to express it in this way, remains the most agrarian of the industrial countries in the world. Table 8 cites an approximate evaluation of the structure of the formed national income in the USSR and in certain developed non-communist countries during 1960-1969 converted to the MBS system (for greater comparability). With all the reservations regarding statistical accuracy of calculations it is possible to assert that the share of agriculture in the formation of national income in the USSR is much higher than in the countries taken for comparison, while the share of transportation and trade is lower.

Assuming that data in Table 8 are sufficiently reliable we attempted to evaluate, on the basis of 1959 and 1966 balances, the comparative energy intensiveness of comparable units of production of various branches of the national economy of the USSR (again on the basis of the same coefficients for conversion into reference fuel as those indicated below). The calculation confirmed the generally accepted opinion in the USSR concerning the significant conversion into reference fuel as those indicated above). The calculations confirmed the generally accepted opinion in the USSR concerning the significant non-labor expenditures on agricultural production (the labor input of kolkhoz members, in accordance with the Soviet economic doctrine does not cost anything). The obtained results are cited in the upper part of Table 9.

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* See Narodnoyè Khozyaystvo SSSR v 1970 g., page 172.

Table 8. Structure of the Formation of National Income of the USSR and Certain Non-Communist Countries Converted to the MBS System (Evaluation)

	National Income			Con-struc-tion	Trade	Trans-portation and com-munication	Other branches
		Agricul-ture	Industry				
USSR	100	22	52	9	6	6	5
USA	100	5	50	8	27	10	-
Canada	100	9	48	9	19	15	-
Japan	100	14	46	9	20	11	-
France	100	10	55	13	15	7	-
FRG	100	6	58	10	18	8	-
Italy	100	15	47	11	19	8	-
Sweden	100	7	44	12	27	10	-
England	100	5	57	10	16	12	-

Source: Calculated according to Yearbook of National Accounts Statistics 1970, Vol 2, pp 46-73.

Table 9. Evaluation of the Power Intensiveness of a Unit of Production in Branches of the National Economy of the USSR and Other Countries.

	Entire economy	Agri-culture	Industry	Construc-tion	Trade	Trans-portation and com-munication	Other branches
USSR-1959	100.22	119.3	100.0	90.9	88.2	116.0	59.8
1966	99.14	124.8	100.0	72.6	100.4	122.1	94.6
USA	96.18						
Canada	102.04						
Japan	98.75						
France	97.59						
FRG	96.92						
Italy	98.40						
Sweden	96.20						
England	97.58						

Note: Calculations for the USSR were made on the basis of data of inter-branch balances of 1959 and 1966 (published in Narodnoye Khozyaystvo SSSR in 1960 and 1968, correspondingly). Calculations for other countries were carried out on the basis of structures cited in Table 8, compared to average indexes for the USSR in 1959 and 1966.

Table 9 indicates that for purely structural reasons the Soviet economy is in need of a relatively greater amount of energy resources than the economies of other developed countries (by approximately three to five percent). It is difficult to judge the direction which the change in this index is following by the interbranch balance, particularly as a result of fluctuations in agricultural production.

Summarizing the results of the analysis of infrastructural disproportions connected with the correlation of the dynamics of national income, industrial production, agriculture, transportation, and power consumption in the USSR it is possible to reach the following conclusions.

1. Industrial development in the USSR significantly outstrips the growth of national income and development of other branches forming national income.

2. Participation of agriculture in the formation of national income is decreasing and the decrease in its share in the national income is taking place faster than in other advanced countries with a developed agrarian sector. Nevertheless the role of agriculture in the Soviet economy is still very great.

3. In the development of railway transport the USSR outdistances the developed non-communist countries. However, data are lacking for a comparison of the dynamics of all forms of transport. Indirect information permits one to assume that even with such high tempos, the vast area of the USSR, the shift of raw material extraction to the east and the break between producers and manufacturers cause Soviet transport to be the obstacle in the development of the economy.

4. The fuel-power problem forms the weakest link in the Soviet economic structure. It may be assumed that their influence is felt in all spheres of the economy including agriculture and transport. The reasons for these difficulties lie in an overall shortage of energy carriers, significant expenditures of some energy carriers on the production of others, and increased energy intensiveness of the Soviet economy by comparison with other industrial economies.

5. The Soviet political-economic system reacts to its structural defects with a considerable delay. The accumulation of these defects, however, makes it necessary to undertake certain measures. Periodic disruptions constitute a prod in this direction particularly in agriculture, which under different circumstances might not be as catastrophic (for example, with organized transportation and a sufficient supply of fuel even with poor weather conditions, it would be possible to decrease harvest losses by a significant degree).

6. Soviet authorities have already demonstrated their readiness to seek aid in the West in the field of infrastructure. Inasmuch as vast amount of funds is required even for an insignificant smoothing out of infrastructural defects that have intensified in the USSR economy, along with serious technical transformations and long periods of time, it is possible to assume that involvement of the Soviet Union in economic links with the West and its interest in such contacts will be unprecedented in relations of the West with the USSR over the past 40 years.

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